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In the Supreme Court of the United States

No. 1079

OCTOBER TERM, 1967.

THE F. E. MYERS & BRO. CO.,
Petitioner,

vs.

FMC CORPORATION,
Respondent.

PETITION FOR A WRIT OF CERTIORARI
To the United States Court of Appeals
For the Sixth Circuit.

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PETITION FOR A WRIT OF CERTIORARI To the United States Court of Appeals For the Sixth Circuit.

Petitioner, The F. E. Myers & Bro. Co., prays that a writ of certiorari issue to review so much of the judgment of the Court of Appeals for the Sixth Circuit in the above entitled case as adjudges valid United States Patent No. 2,476,960 issued July 26, 1949.

OPINIONS BELOW.

The opinion of the Court of Appeals is reported at 384 F.2d 4, and is reprinted in the Appendix hereto. There was no reported opinion of the District Court.

JURISDICTION.

The judgment of the Court of Appeals was entered on September 28, 1967. A timely Petition for Rehearing was denied on November 8, 1967.

The jurisdiction of this Court is invoked pursuant to 28 U. S. C. § 1254(1).

QUESTIONS PRESENTED.

I. Whether a sworn statement by a patentee during trial admitting the use of a functionally operable device prior to the period of statutory limitation as defined by 35 U. S. C. § 102(b) shifts the burden to the patentee to show that such use was a secret or experimental use.

II. Whether a patentee is overextending his monopoly where he admits the use of a functionally operable device two years prior to filing for a patent and where that same patentee is, during that time period, enjoying the benefits of the monopoly resulting from the grant of other patents covering substantially the same subject matter.

CONSTITUTIONAL PROVISION AND STATUTE INVOLVED.

Article I, Section 8:

The Congress shall have power * * * To promote the Progress of Science and useful Arts, by securing for limited times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.

35 U. S. C. § 102:

A person shall be entitled to a patent unless * * *

(b) The invention was * * * in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, * * *.

STATEMENT OF THE CASE.

This litigation began on June 10, 1963 when FMC Corporation (hereinafter FMC), Respondent herein, filed its complaint in the Northern District of Ohio against The F. E. Myers & Bro. Co. (hereinafter Myers), Petitioner. Although not alleged as such, the basis for jurisdiction in the District Court was 28 U. S. C. § 1338(a) and 35 U. S. C. § 281.

FMC asserted that Myers infringed three patents: Daugherty Patent No. 2,476,960, granted July 26, 1949 (hereinafter Daugherty Patent '960*); Andrews Patent No. 2,569,274, granted September 25, 1951; and a third patent as to which the action was dismissed before the trial. These patents covered what can most simply be described as "orchard sprayers." The District Court, adopting FMC's Finding of Fact and Conclusions of Law as submitted, found both of the remaining patents in suit valid and infringed. The Court of Appeals for the Sixth Circuit reversed as to the infringement of the Andrew patent and affirmed as to Daugherty Patent '960. A Petition for Rehearing was denied, that petition going toward the only basic issue presented to this Court—the validity of Daugherty Patent '960.

As one of its defenses, and the basic one in issue here, Myers argued that the Daugherty Patent '960 was invalid under 35 U. S. C. § 102(b) due to a prior public use. The basis for this defense came from the testimony of the inventor himself, the pertinent testimony being quoted in the Sixth Circuit decision:

> "Q. When did you first start making a machine of the type which was disclosed in this patent?

---

* The Daugherty patent '960 was granted on application Serial No. 639,949, filed January 9, 1946.

A. We first started experimental work on it in late '42 and early '43.

Q. And when did you first operate a machine of the type that is shown in that patent?

A. In '44 sir.

Q. Did it operate satisfactorily?

A. Yes, sir, it did.

Q. When did you actually start marketing a machine of the type shown in the patent in suit?

A. In '45." (App. p. 17, *infra.*)

Thus it became evident that the period immediately prior to 1946, over twenty years ago, was to become a critical period in this litigation. It seems that Mr. Daugherty was in no hurry to obtain patent protection on the machine which operated satisfactorily in 1944, the application not being filed until 1946. The reason for this dilatory action is illuminated when the other contemporaneous patents of Mr. Daugherty are considered. These patents consisted of patent No. 2,220,082 (hereinafter Daugherty I); patent No. 2,331,107 (hereinafter Daugherty II); patent No. 2,358,318 (hereinafter Daugherty III); and patent No. 2,423,008 (hereinafter Daugherty IV).

Mr. Daugherty was in no hurry to obtain still further patent protection on the orchard sprayer which operated satisfactorily in 1944 since these prior patents covered much the same apparatus. For example, every element in claim 16 of the Daugherty patent '960 is found in Daugherty I, except one element which is found in Daugherty II. Next, the Daugherty III patent issued, further extending the monopoly. Claim 13 of Daugherty III recited an "air tunnel" as being new. However, this element was found in claim 1 of Daugherty I and claim 13 of Daugherty II. Daugherty III also recited a "means for creating an air blast through said tunnel." This element

is also found in Daugherty I and II. The only element in claim 13 of Daugherty III not literally found in his previous patents was "an end limit plate." Three years later (in Daugherty IV) FMC obtained another patent to "greatly increase" the efficiency of the machine embodied in the Daugherty III patent. Again, however, only the basic elements of the previous patents were recited.

Quoting from the main brief of Myers to the Sixth Circuit:

> "It is therefore manifest that throughout the patent evolution of the Daugherty SPEED SPRAYER—from 1936 to 1944—some things always remained the same. *Every machine had a tunnel*—long in the first machine, shorter in the second, third and fourth machines. *Every machine had a propeller*—mounted on an axis for rotation in the tunnel. *Every machine had nozzles and piping for supplying insecticide material into the air blast.*" (Emphasis in original.)

The Sixth Circuit decision made note of the only possible difference between the '960 patent and the other Daugherty patents. It was said that "the air is drawn into the machine * * * axially at the rear of the machine, and after traveling toward the front is discharged radially from the sides." (App. 13-14, *infra.*)

Thus FMC had several variations of an orchard spraying machine available for testing during 1944. There is no one better qualified than the inventor to relate when the testing o. demonstration of a particular variation took place. That is why the above quoted testimony of Mr. Daugherty as to the 1944 satisfactory use of the '960 machine became so critical to this case.

To better determine what was taking place in the critical period of 1944-1946, Mr. Daugherty was asked what was done in attempting to market the machine, to

which he replied that "the first place we took it for demonstration—*except for a few acres in citrus*—we took it to Hagerstown, Maryland * * * and made a demonstration there" (R. 469). (Emphasis added.) Mr. Daugherty testified that he personally took a movie of that demonstration (that testimony is reproduced at pages 15-17 of Myers' Petition For Rehearing) in Hagerstown, Maryland; not in Orlando, Florida where the Speed Sprayer factory was located and where, in 1944, there were "a few acres of citrus" available for testing.

This movie is identified as plaintiff's Exh. 20 and was shown to the District Court during the testimony of plaintiff's witness Carr. (This testimony is reproduced at pages 13-15 in Myers' Petition For Rehearing.)

This movie is typical of a "satisfactory operation" of an orchard sprayer. As Mr. Daugherty testified, his frame of reference for success was actual control of the pests (R. 464-65). It is also evident that to know whether an orchard sprayer operates satisfactorily, it must be tested in an orchard to determine "the capabilities of the machine in reaching larger trees"; to see that the "material penetrates into the interior of the tree [which] is vital to a good spray job for the control of the trees"; and to demonstrate that the spray "is actually penetrating into the tree and through the other side." (See excerpts of the Carr testimony commenting on the movie, R. 43-44.)

It was upon basically these summarized facts that Myers sought a rehearing in the Sixth Circuit and now seeks the granting of its Petition for Certiorari in this Court.

ARGUMENT AND REASONS RELIED ON FOR ALLOWANCE OF THE WRIT.

I.

The Sixth Circuit held:

> "The party asserting patent invalidity on the basis of public use prior to the period of limitation must show such use by evidence which is at least clear and convincing, Atlas v. Eastern Air Lines, Inc., supra, 311 F.2d at 160 [1st Cir. 1962]; McCullough Tool Co. v. Well Surveys, Inc., supra, 343 F.2d at 381; Julian v. Drying Systems Co., 346 F.2d 336, 338 (7th Cir. 1965); cf. United Parts Mfg. Co. v. Lee Motor Products, Inc., 266 F.2d 20 (6th Cir. 1959). 'However, once a prima facie demonstration of the claimed use has been made, the inventor carries the burden of showing that the use was not of a functionally operative device, or was substantially used for experimentation or testing purposes * * *' Atlas v. Eastern Air Lines, Inc., supra, 311 F.2d at 160." (App. pp. 18-19 *infra.*)

The Court continued:

> "There is no hint that the successful operation of the machine in 1944 was a public use as compared with a private use. Appellant has not carried its burden of going forward with the evidence on this point * * *. There is no evidence that the successful operation did not occur in Daugherty's workshop rather than an orchard, or that (assuming that the testing site were an orchard) precautions had not been taken to veil the operation from the public." (App. 19, *infra.*)

It is the propriety of this latter quoted passage that Petitioner questions. Petitioner submits that having shown a use in 1944, a use that proved the machine "satisfactory"; having elicited from the inventor himself that a use occurred in a few acres of citrus prior to the demon-

stration embodied in the motion picture (Exh. 20); having heard the testimony of the inventor and of the witness Carr to the effect that a successful testing and demonstration occurs in an orchard; and having the motion picture in the record which shows that a use, to be successful, must occur in an orchard; it is evident that Petitioner *did* satisfy its burden of showing a use according to 35 U. S. C. § 102(b) and thereafter the burden of proof shifted to the patentee to show that it was *experimental rather than public.* Remembering that the patentee himself said the use was not experimental, all that FMC could have proved was that the use was secret. However, no such evidence was forthcoming, and it seems that it could not have been—for, how can one veil an orchard?

Nevertheless, as stated by Judge Learned Hand in *Aerovox Corp. v. Polynet Mfg. Corp.*, 67 F.2d 860, 861 (2d Cir. 1933):

> "Certainly when the putative use is by the patentee, it is fairer to put the burden on him, since it is he who has access to the evidence."

Further, "one who alleges a secret use should offer evidence to sustain it." *Marks v. Polaroid Corp.*, 129 F. Supp. 243, 253 (D. Mass. 1955), *aff'd*, 237 F.2d 428 (1st Cir. 1956), *cert. denied*, 352 U. S. 1005 (1957).

In the *Aerovox* decision, Judge Hand pointed out that the Circuit Courts were in conflict as to the above quoted law. This fact was emphasized to the Sixth Circuit in the present case in Petitioner's Petition for Rehearing. Having denied this Petition without opinion or clarification, the conflict between the circuits, at least the Sixth Circuit and the Second Circuit, has become magnified.

Thus, the Petitioner requests that the Supreme Court grant certiorari on this issue to resolve this conflict which involves a most important question in patent law.

II.

As to the issue involving an overextension of the monopolies previously granted Mr. Daugherty and FMC, the Sixth Circuit's decision was seemingly silent. It made no comment about this Court's decision of *Woodbridge v. United States,* 263 U. S. 50, 56 (1923), where it was held that "any practice by the inventor and applicant for a patent through which he deliberately and without excuse postpones beyond the date of actual invention, the beginning of the term of his monopoly, and thus puts off the free public enjoyment of the useful invention, is an evasion of the statute and defeats its benevolent aim."

Petitioner contends that the inventor in this case, Mr. Daugherty, "postponed," with full knowledge of FMC, the filing of the application so that his then existing monopoly (Daugherty I-IV, inclusive) would be extended.

It is true that an inventor is not required to apply for a patent. Instead, he may maintain his invention in secrecy. However, he cannot attempt to maintain secrecy (which FMC did not attempt to prove) for a period of time after a successful operation of the invention, and then later file for a patent to get seventeen more years of protection. He must make an election. See *Macbeth-Evans Glass Co. v. General Elec. Co.,* 246 Fed. 695 (6th Cir.), *cert. denied,* 246 U. S. 659 (1917).

This very argument was presented to the Sixth Circuit. Its silence on this question can either mean that they disagree with the *Woodbridge* decision; that they believe that the *Woodbridge* decision should not apply to the facts herein; or that they failed to consider the question.

If the Sixth Circuit disagrees with the decision of this Court in the *Woodbridge* case, then the conflict necessary to form the basis for granting certiorari is present. If the Sixth Circuit either failed to consider the issue or did con-

sider the issue but found that *Woodbridge* does not apply to these facts, it is submitted that this case affords this Court an excellent opportunity to confirm the very important doctrine expounded in the *Woodbridge* case.

CONCLUSION.

For the reasons stated herein, Petitioner respectfully requests that this Petition for Certiorari be granted.

Respectfully submitted,

EVERETT R. HAMILTON,
Counsel for Petitioner.

APPENDIX.

OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE SIXTH CIRCUIT.

Decided September 28, 1967.

Before: O'SULLIVAN, CELEBREZZE and PECK, Circuit Judges.

PECK, Circuit Judge. This patent case commenced when plaintiff-appellee, FMC Corporation (hereinafter "FMC") filed a complaint in the United States District Court for the Northern District of Ohio charging defendant-appellant, The F. E. Myers & Bro. Co. (hereinafter "Myers") with infringement of three patents owned by FMC. Myers denied in its answer that the patents were valid and had been infringed. Subsequent to dismissal of the action as to one of the patents in suit by stipulation of the parties, the cause was tried before the District Court, which found for FMC, holding that both patents were valid and had been infringed.

Upon submission of the cause following trial, the District Court requested both parties to file proposed findings of fact and conclusions of law; plaintiff's proposed findings and conclusions were thereafter adopted by the court as submitted, providing the basis for the judgment entered.

Both combination patents in suit, Daugherty Patent No. 2,476,960, granted July 26, 1949, on application filed January 9, 1946 (hereinafter "Daugherty patent '960"), and Andrews Patent No. 2,569,274, granted September 25, 1951, on application filed August 25, 1947 (hereinafter "Andrews patent"), and the accused devices of Myers, relate to air blast sprayers used in spraying or dusting orchard trees with insecticide or the like. These machines

basically consist of a wheeled chassis (suitable for being pulled by a tractor or other vehicle) upon which there is a storage tank for the insecticide material, a source of power for the spraying apparatus (usually an internal combustion engine), and the spraying apparatus itself. The spraying is accomplished by use of a propeller, or impeller, which creates a blast of air within the machines that is then deflected toward, and carries the mist-like insecticide material to the trees to be sprayed.

Mr. George Daugherty had, prior to the grant of Daugherty patent '960, contributed substantially to the air blast sprayer field, as evidenced by several earlier patents on said machines or improvements thereof. Prior to the invention of the machine disclosed in the Daugherty patent in suit, the record shows that air blast sprayers utilized a propeller which created a "flat wall" blast of air within a tunnel in the machine. This was directed toward the trees by a deflector system consisting of deflectors, referred to as a "Venetian blind" type, which are sometimes referred to as "guide fins" and "elevator vanes." In these earlier model sprayers, the air entered the machines radially through air intake sections on the side of the machine, traveled longitudinally through the tunnel portion of the sprayer and exited at the rear, where the deflectors were situated.

The purpose of the invention disclosed in Daugherty patent '960, as stated in the specifications, was "to contribute to the art a spraying or dusting machine that is extremely effective in the generation of a large volume of insecticide carrying air that may be subjected readily to deflection and other controls." Claim 4 of the Daugherty patent in suit, not alleged to be infringed by Myers, is here set forth for the limited purpose of illustrating or describing the invention disclosed:

"4. In a machine of the class described, a tunnel, an air propeller having a central imperforate hub portion and a series of blades, means mounting said propeller for rotation in an axis longitudinal and substantially central of said tunnel for developing a flow of air longitudinally through said tunnel, a cylindrical shell substantially the same in diameter as the hub portion of said air propeller secured in said tunnel coaxially with said propeller and forming with said tunnel an air ring for the passage of the air blast generated by the blades of said propeller, a ring deflector forming substantially a continuation of the exhaust end of said cylindrical shell and curved radially outwardly to deflect the ring of air radially and outwardly of said air ring toward the foliage to be sprayed, a complementary curved ring deflector secured at the end of the tunnel, and means for feeding an insecticide or the like positioned relatively to said air ring whereby the ring-like blast of air generated through said air ring will pick up the insecticide fed by said means and form it into a fine fog."

In lay language, it may be said that a ring of air is generated by a propeller having a central imperforate hub, which ring-like blast of air is maintained between the tunnel or confining surface about the propeller and a cylindrical shell which runs through the center of the tunnel. Further, the center shell is about the same diameter as the propeller hub, and is connected to the narrow diameter portion of a "trumpet-shaped" or "morning glory" type deflector, which, as the name implies, looks similar to the bell-shaped portion of a trumpet, and which performs the function (in conjunction with a complementary deflector of the same general nature) of deflecting the air radially to the machine. In addition, the air is drawn into the machine disclosed in Daugherty patent '960 axially at the

rear of the machine, and after traveling toward the front is discharged radially from the sides. FMC alleges that this last mentioned feature of axial intake and radial discharge is a great improvement over earlier models where both intake and discharge were radial, in that recirculation of insecticide laden air is reduced to a minimum thereby improving overall efficiency and preventing corrosion caused by the insecticide material.

As mentioned above, it is appellant's position that the Daugherty patent in suit is invalid. Except as hereinafter noted, there is no dispute that two of the three explicit conditions to patentability, novelty and utility, have been satisfied. Myers does argue, however, that the disclosure lacks patentable invention under 35 U.S.C. § 103.

Not every new device or process is patentable; there must be a difference between the new device or process and the prior art which is sufficient to warrant the granting of a patent monopoly in which the public as a whole has an interest. This requirement is set forth in section 103 of Title 35:

> "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. . . ."

The Supreme Court has recently stated that this section, which was first enacted in the 1952 Patent Act, was "intended merely as a codification of judicial precedents embracing the *Hotchkiss* condition . . ." (*Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)), that a patentable invention evidence more ingenuity and skill than that

possessed by an ordinary mechanic acquainted with the business.

The record in this case, which contains the file wrapper of the Daugherty patent in suit, shows that Daugherty had some difficulty obtaining his patent from the Patent Office. On May 13, 1946, the Examiner rejected all 28 claims in the application on the ground of undue multiplicity, and further rejected 17 claims on the additional ground as "defining nothing patentable over applicant's prior patent 2,358,318 taken in view of the other references cited. . . ." Following further correspondence by Daugherty's attorney, the Examiner stated that 14 claims which recited the limitation that the fan hub be of the same diameter as the inner shell were "rejected as not patentable over Daugherty in view of Ponomaroff [sic] and Blumenthal since no invention is apparent in using either the annular form of air tunnel nor the Blumenthal deflectors." After subsequent amendments of the claims and interviews with the Examiner, the patent was granted.

Despite the doubt expressed by the Examiner as to the propriety of allowing certain claims in light of the ten prior art references cited by the Patent Office, appellant relies on only one of said prior art references for its defense, an earlier patent issued to Daugherty (No. 2,358,318). Appellant also relies on four patents not cited by the Patent Office, three other Daugherty patents and Ponomareff (No. 2,169,234). The three Daugherty patents not cited all involved spraying machines which utilize elements generally found in the instant patent, such as a storage tank, a tunnel, a propeller, and a deflector system. These earlier air blast sprayers of Daugherty do not, however, employ a ring-like blast of air deflected by a trumpet shaped deflector system, but rather, as mentioned above, create a "flat wall" blast of air which is deflected by Ve-

netian blind type deflectors. The uncited Ponomareff patent entitled "Blower Apparatus" discloses a propeller with what appears to have a "central imperforate hub portion" adjacent to a "central or core sleeve . . . whose upper end is . . . of substantially the same diameter as the hub . . ." Appellant contends that the Examiner should have applied this uncited patent and held that the subject matter of the claims reciting an "imperforate hub portion" of the propeller were obvious in view of the prior Daugherty patents.

Aside from the remarks of the Patent Examiner found in the file wrapper of Daugherty patent '960, we are shown no evidence introduced at trial tending to establish the nature and extent of use of the alleged prior art "trumpet-shaped" deflector. However, the fact that this element, and the element consisting of a propeller with an imperforate hub adjacent to a central sleeve of substantially the same diameter, may have been old in the arts per se is not sufficient to permit appellant to prevail here. "The very essence of a combination patent is that it is made up of a number of elements, some or all of which may be old. Its claim to a patent grant is that it is a new combination or grouping of the elements which accomplishes a new and useful result." (*Firestone v. Aluminum Co.*, 285 F.2d 928, 930 (6th Cir. 1960)). Thus with respect to the combination disclosed in Daugherty patent '960, it is here determined that the District Court correctly concluded that the evidence adduced did not show that the invention was the result of mere mechanical skill rather than inventive ingenuity. That is, the District Court properly held that the presumption of validity to which a patent is entitled (35 U.S.C. § 282) had not been overcome by the evidence presented.

Appellant's next contention is that Daugherty patent

'960 is invalid because the invention disclosed was in public use for more than one year prior to the application for a patent, as proscribed by 35 U.S.C. § 102(b) which provides that an applicant will not be entitled to a patent if "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. . . ."

This defense is based on the following testimony elicited from Mr. Daugherty at trial:

> "Q. When did you first start making a machine of the type which was disclosed in this patent?
>
> "A. We first started experimental work on it in late '42 and early '43.
>
> "Q. And when did you first operate a machine of the type that is shown in that patent?
>
> "A. In '44 sir.
>
> "Q. Did it operate satisfactorily?
>
> "A. Yes, sir, it did.
>
> "Q. When did you actually start marketing a machine of the type shown in the patent in suit?
>
> "A. In '45."

On cross-examination it was further established that the machine which was operated successfully in 1944 was "the same, fundamentally," except for some changes in the guide vanes and airfoil sections, as the machines which were later marketed and for which the patent in suit was obtained.

Generally, any non-secret use of a completed and operative invention in its natural and intended way is a "public use" within the meaning of this section. *Atlas v. Eastern Air Lines, Inc.*, 311 F.2d 156 (1st Cir. 1962), *cert. denied*, 373 U.S. 904 (1963). Of course, "the public use must be open to the public or where any member of the public can see it if such a member so desires." 1 *Walker*,

Patents § 65 p. 313 (Deller ed. 1964). And a single public use is sufficient to invalidate a patent. *Consolidated Fruit Jar Co. v. Wright*, 94 U.S. 92 (1876); *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F.2d 381 (10th Cir. 1965), *cert. denied*, 383 U.S. 933 (1966). However, not every use is a public use under section 102(b).

While "the purpose of the 1-year statutory bar is to prevent an inventor from obtaining profits on his invention for a number of years and then at a later date obtaining a patent," *Ushakoff v. United States*, 327 F.2d 669, 672 (Ct. Cl. 1964); see also *Pennock v. Dialogue*, 27 U.S. 1 (1829); *Andrews v. Hovey*, 123 U.S. 267 (1887), aff'd on rehearing, 124 U.S. 694 (1888), the necessity of permitting a period of experimentation has been recognized. Thus, an exception to the public use provision is made where the use is one "which may be properly characterized as substantially for purposes of experimentation," *Smith & Griggs Mfg. Co. v. Sprague*, 123 U.S. 249, 256 (1887). During this period the inventor may use his invention without concern for the statutory bar "for the purpose of testing the machine," *Ibid.*, or "in order to bring the invention to perfection. . . ." *Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. 126, 134 (1877).

The party asserting patent invalidity on the basis of public use prior to the period of limitation must show such use by evidence which is at least clear and convincing, *Atlas v. Eastern Air Lines, Inc., supra*, 311 F.2d at 160; *McCullough Tool Co. v. Well Surveys, Inc., supra*, 343 F.2d at 381; *Julian v. Drying Systems Co.*, 346 F.2d 336, 338 (7th Cir. 1965); cf. *United Parts Mfg. Co. v. Lee Motor Products, Inc.*, 266 F.2d 20 (6th Cir. 1959). "However, once a prima facie demonstration of the claimed use has been made, the inventor carries the burden of showing that the use was not of a functionally operative device,

or was substantially used for experimentation or testing purposes. . . ." *Atlas v. Eastern Air Lines, Inc., supra*, 311 F.2d at 160. *Koehring Co. v. National Automatic Tool Co.*, 362 F.2d 100 (7th Cir. 1966).

The District Court made no findings of fact on this critical issue of prior public use, as required by Rule 52(a), Federal Rules of Civil Procedure. While this Court generally requires strict observance of this Rule relating to the sufficiency of the findings of fact (*Deal v. Cincinnati Board of Education*, 369 F.2d 54 (6th Cir. 1966); *Tappan Co. v. General Motors Corp.*, ___ F.2d ___ (6th Cir., July 17, 1967)), the record itself is unsatisfactory on this point and affords scant basis for a determination. While such evidence as is contained in the record, viewed most favorably from appellant's position, could support a finding that a prior use had occurred, there is no hint that the successful operation of the machine in 1944 was a public use as compared with a private use. Appellant has not carried its burden of going forward with the evidence on this point by assuming that the use must have occurred in an orchard, arguing, "how else could one know that the sprayer operated satisfactorily except in a grove where anyone could see. . . ." There is no evidence that the successful operation did not occur in Daugherty's workshop rather than an orchard, or that (assuming the testing site were an orchard) precautions had not been taken to veil the operation from the public.

With respect to Myers's defense of noninfringement, the accused machines are quite similar to the machines disclosed by Daugherty patent '960. However, in the Myers machines the propeller, or impeller, is situated adjacent to the trumpet-shaped deflector at its narrowest diameter; these machines thus have a more limited confining surface about and downstream of the propeller

than, as depicted in the drawings accompanying the Daugherty patent, the Daugherty devices. Appellant therefore argues that the accused machines do not contain the elements of 1) a tunnel, 2) a shell secured in said tunnel and 3) the extension of the propeller hub formed by the outer surface of the shell, as required by some of the claims allegedly infringed.

While it is true, as appellant contends, that every element of a claim charged to be infringed must be found in the accused device and that the omission of any one element precludes infringement (*Sears, Roebuck & Co. v. Minnesota Mining & Mfg. Co.*, 249 F.2d 66 (4th Cir. 1957), *cert. denied*, 355 U.S. 932 (1958); *United States Rubber Co. v. General Tire & Rubber Co.*, 128 F.2d 104 (6th Cir. 1942)), it is equally clear, as was recognized in the above cases, that the doctrine of equivalents applies to combination patents just as to any other type of invention. *Aluminum Co. v. Sperry Products, Inc.*, 285 F.2d 911, 923 (6th Cir. 1960), *cert. denied*, 368 U.S. 890 (1961); 3 *Walker, Patents* § 625 (Deller ed.) cited in *United States Rubber Co. v. General Tire & Rubber Co., supra*, 128 F.2d at 109.

In the instant case the District Court found as facts that the confining surface about the propeller in Myers's machines was a "tunnel" as that term is used in the claims, and that the trumpet-shaped deflector used in appellant's equipment was "a shell as that term is used in the claims of the Daugherty patent since it acts as an extension of the propeller hub" and "helps to maintain the ring-like form of the air" as it is passed through the machine. In light of the teachings of the Daugherty patent in suit that the tunnel (and necessarily the shell secured therein) may be "long or relatively short" (Specifications to Daugherty patent '960), it cannot be said that these find-

ings are clearly erroneous. Moreover, in the final anlysis, infringement is not a mere matter of words; the question is one of substantial identity. *Nickerson v. Bearfoot Sole Co.*, 311 F.2d 858, 881 (6th Cir. 1962), *cert. denied*, 375 U.S. 815 (1963). The evidence here permits of no conclusion other than that the disputed elements found in the accused machines are equivalents to those set forth in the claims of the patent, and that both machines perform the same, or substantially the same, function in substantially the same way to obtain the same results. *Nickerson v. Bearfoot Sole Co., supra*, 311 F.2d at 879; *Thabet Mfg. Co. v. Koolvent Metal Awning Corp.*, 226 F.2d 207 (6th Cir. 1955). The differences between the accused machines and those constructed in accordance with the teaching of the Daugherty patent may fairly be characterized as differences in degree which are insufficient to negate the conclusion of infringement.

Claims 13 and 15,* which are charged to be infringed, do not call for any of the three disputed elements discussed above. With respect to these claims, appellant argues that certain phases, such as "ring-like form of the air blast" and "maintained," should be given a narrow interpretation in view of the patent specifications. How-

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* Claim 15 reads in its entirety as follows:

"15. In a machine of the class described, an air propeller having a central imperforate hub portion having substantially no air blast generating function and a series of blades extending from said hub portion adapted to generate a ring-like blast of air, a confining surface about said propeller defining the outer periphery of said ring-like blast of air, a deflector for said ring-like blast of air forming substantially an extension of the outer periphery of said central hub portion whereby to maintain the ring-like form of the air blast generated by said series of blades by defining the inner periphery of said air blast, said deflector curving radially outwardly relatively to the axis of rotation of said propeller to deflect the ring-like air blast radially of the propeller axis, and means for feeding insecticide to said ring-like blast of air to be carried thereby to the foilage."

ever, there appears to be no justification for attributing the restrictive meaning to the disputed phrases as they are used in context in the claims, as appellant urges, and this contention is rejected. Therefore, the judgment of the District Court relative to the issue of infringement must be affirmed.

The second patent involved in this case is Andrews patent No. 2,569,274, also owned by FMC. The purpose of this combination improvement patent was to increase the efficiency of spraying machines such as those covered by earlier Daugherty patents, including the Daugherty patent in suit. Although, Andrews states that his invention is "readily applicable" to structures of the type set forth in Daugherty patents other than patent '960, in view of the representations by Daugherty and his attorney to the Patent Office during the prosecution of patent '960 that "the machine of this application is so superior to the older machine covered by applicant's older patents, that the older machine is no longer being manufactured," it may therefore properly be assumed that Andrews' invention was intended to be, and in fact is, being used principally in connection with the type of sprayer disclosed in the Daugherty patent in suit.

One of the principal difficulties or problems encountered in machines constructed in accordance with the Daugherty patent in suit was that by use of a "trumpet-shaped" deflector, the ring-like blast of air was deflected radially over a 360° area, or in the words of one of FMC's chief witnesses, James Carr (Chief Engineer of the Agricultural Department of the John Bean Division of plaintiff corporation), "the air was diverted radially by the trumpet in all directions, that is vertically, horizontally—vertically, both top and toward the ground." The air thus diverted toward the ground not only would cause dust to

be thrown up by the sprayer, but, as is obvious, was not utilized in carrying insecticide material to the trees. Daugherty's solution to the problem was the placing of a piece of sheet metal with extended leaves below the entire deflector system, it being the function of the leaves to "receive the air that is directed radially downward . . . and to redirect that air upwardly and to each side of the machine." Mr. Carr testified as to Daugherty's solution and its disadvantages:

> "Daugherty attempted to avoid difficulties with the air which was directed toward the bottom and would cause dust to be thrown up by blowers that went through the orchard by placing a plate at the bottom of the blower, and shaping it so that it was generally —bounce the air back up toward the sides. This had the big disadvantage of causing turbulence in the lower part of the discharge of the blower, since the force components of the air being diverted from the blower were not in the same lineal direction as the air flowing from the main section of the blower. . . ."

In the specifications to Andrews' patent it is stated that "it has been found that there is considerable loss in efficiency because of this diversion of part of the air blast in the machine of the Daugherty Patent No. 2,476,960," and that his invention consisted of means for "utilizing efficiently that portion of the air blast that is developed at the lowermost portion of the machine of the class set forth in the Daugherty patents." Briefly stated, Andrews' invention consists of placing a funnel, or auxiliary deflector, in the path of the lowermost angular sector of the ring-like blast of air, which funnel directs the air upwardly and outwardly in such manner that it augments that portion of the air blast deflected by the Daugherty deflectors. As Andrews' attorney stated in a letter to the Patent Ex-

aminer during the pendency of the application, and received in evidence:

> "The air [which is shielded at the bottom of the deflector in Daugherty patent '960] then is forced to move circumferentially and to join the air that has been given motion radially of the machine. Because the circumferentially moving air must thus join with the radially moving air, it is quite obvious that losses must occur. It is for the purpose of obviating these losses that applicant conceived the structure of this application. Thus, applicant presents a funnel for accepting that portion of the air that would normally be directed circumferentially in the Daugherty structure. Applicant then funnels the air to augment the air directed by the remainder of the deflector system.
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> "It is respectfully submitted that in order to define specifically the structure of the present invention, it is necessary to claim that construction relatively to the construction of the Daugherty application. As a matter of fact, applicant could claim the present invention specifically by describing the Daugherty application and then saying that the improvement in this case is the cutting away of a part of the deflector ring system of the Daugherty application and substituting therefor a funnel used to direct the air to augment the air moving radially through the operation of the Daugherty deflecting system."

Not every model of Myers's air blast sprayer embodies an auxiliary deflector of the type which allegedly infringes the Andrews patent, and the District Court held that only those accused machines which did have the auxiliary deflector infringed the Andrews patent. The evidence shows that the auxiliary deflector in the accused sprayers consists generally of "a baffle which is curved with a larger radius of curvature than the periphery of the general round structure, but which extends axially across the an-

nular path behind the fan. This is a curved baffle that . . . divides the annular space in a segment—modified segment at the bottom." This baffle is supported by a single strut situated below the center of an imaginary horizontal diameter of the trumpet-shaped deflector. Below the baffle is the deflector means which "split[s] . . . the air at the center" near the supporting strut, and directs it radially of the longitudinal axis of the sprayer. The bottom portion of the machine, below the auxiliary deflecting means, "is simply a plate across the bottom of the blower."

As with the Daugherty patent in suit, Myers denies validity and infringement of the Andrews patent. While it is undoubtedly the "better practice," because of the general public interest upon which the patent system is founded, to inquire fully into the validity of a patent which constitutes the basis of an infringement action (*Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327 (1945); *The Tappan Co. v. General Motors Corp, supra*), we do not reach the District Court's decision regarding the validity of Andrews patent due to special circumstances existing in this case. Appellant's present counsel entered the case at a relatively late date, appearing as counsel of record subsequent to the death of appellant's original attorney during the discovery phase of the proceedings. On appeal, Myers complains of the alleged abuse of discretion of the District Court in overruling its motion for continuance of trial, which motion was based primarily on the ground that more time was needed in order to fully prepare appellant's case. This motion was fully argued on briefs and we cannot say that the district judge abused his discretion in denying it. However, without expressing or intimating any view on the adequacy of appellant's defense relating to the validity of the Andrews

patent, it seems likely that a more complete development of this phase of the case might have been presented absent the unfortunate circumstances mentioned. Because of this fact, and more particularly because it appears that a decision on the infringement issue will be dispositive of the appeal concerning the Andrews patent, only that issue is here considered.

Of the seventeen claims in the Andrews patent, claims 1, 2, 3, 4, 6, 10, 12, 13 and 14 are charged to be infringed. With respect to these nine claims, six recite the element of a "funnel." We agree with appellant that claims 1, 3 and 6, which are distinguishable over the prior art Daugherty machines only by the recitation of an "auxiliary deflector" which is defined, not by its structure, but by the function it performs, are functional claims and must be construed "to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112. To the extent that the "air funnel is really an auxiliary deflector," as stated in the specifications, the question initially presented with reference to all disputed claims is whether the element of a "funnel," or its equivalent, is found in the accused device.

A patent must be construed in light of the state of the art to which it pertains. *Maytag Co. v. Murray Corp.*, 318 F.2d 79 (6th Cir. 1963); *Remington Rand v. Meilink*, 140 F.2d 519 (6th Cir. 1944). And "the claim of a patent must be read in the light of the invention disclosed and cannot be given a construction broader than the teachings of the patent as shown by the drawings and specifications." *Blanc v. Curtis*, 119 F.2d 395, 397 (6th Cir. 1940), cited in *Maytag Co. v. Murray Corp., supra*, 318 F.2d at 85. As a general rule, the narrower the invention and the more crowded the art, the stricter will be the construction

afforded the claims of a patent. See *Tillotson Manufacturing Co. v. Textron, Inc.*, 337 F.2d 833 (6th Cir. 1964).

Infringement cannot be established on the basis solely of descriptive words, which may have different meanings even to those skilled in the art, and thus the earlier mentioned doctrine of equivalents must be considered. The essence of this doctrine is that one may not practice a fraud on the patent by appropriating an invention through minor and insignificant changes in a device to avoid the patent; infringement is established once a comparison of the accused device with the patented one shows that both perform substantially the same function, in substantially the same way to obtain the same results. "What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case." *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950). Consideration of the prior art is thus relevant for the range of equivalents varies and depends upon the degree of the invention, (*Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405 (1908)), and where "the Patent is narrow and the art is crowded the range of equivalents is similarly narrow." *Maytag Co. v. Murray Corp.*, 318 F.2d at 86; *Parmellee Pharmaceutical Co. v. Zink*, 285 F.2d 465, 472 (8th Cir. 1961); *Kennatrack Corp. v. The Stanley Works*, 314 F.2d 164 (7th Cir. 1963); *Kwikset v. Hillgren*, 210 F.2d 483 (9th Cir. 1954).

In accordance with the above principles, it has long been the established rule that "if the invention claimed be itself but an improvement on a known machine by a mere change of form or combination of parts, the patentee cannot treat another as an infringer who has improved the original machine by use of a different form or com-

bination performing the same function. The inventor of the first improvement cannot invoke the doctrine of equivalents to suppress all other improvements which are not mere colorable invasions of the first.". *McCormick v. Talcott,* 61 U.S. 402, 405 (1857); see also *Industrial Instrument Corp. v. Foxboro Co.,* 307 F.2d 783, 785 (5th Cir. 1962); *Maytag Co. v. Murray Corp., supra,* 318 F.2d at 84.

In addition to the Daugherty patent in suit, Newcomb, et al. Patent, No. 2,538,879, entitled "Apparatus for Spraying Trees," is prior art with respect to the Andrews patent, the Newcomb patent having been issued January 23, 1951, on application filed in October, 1945. The sprayer disclosed in this patent creates a blast of air by propeller which is deflected by means of a so-called baffle that is quite similar to the "trumpet-shaped" deflector of the Daugherty patent (hyperbolic parabolic shape), the principal difference being that Newcomb's baffle was constructed of several sections pieced together, whereas the Daugherty deflector had a continuous surface. The Newcomb patent also shows the use of six secondary baffles, or curved deflectors, in conjunction with the main baffle. These secondary baffles contact the main baffle, three on a side, one opposite another. The specifications to the Newcomb patent declare:

> "By use of the primary baffle and the secondary baffles . . . that air which would normally be directed downwardly and therefore wasted is directed upwardly and laterally and therefore is of substantial value. It will be noted that the air is turned and directed in a very short area and is turned at right angles to the longitudinal axis of the device and upwardly and laterally simultaneously. In this manner a smooth turn is created and turbulence is reduced to a minimum." (Reference numerals omitted.)

As appellant notes, two of the secondary baffles shown in the Newcomb patent are in substantially the same area in relation to the deflector as is the baffle used by appellant.

It is clear that the Andrews patent is not a pioneer patent; it is a combination patent comprised of old elements, and the patentee may fairly be characterized as a narrow improver in an art which, considering its scope, is relatively crowded. Accordingly, the claims in dispute should be narrowly construed.

Reading the claims of Andrews patent in light of the specifications and drawings, the patent teaches the use, in combination with a deflector system and spraying machine, of a funnel or passageway which, in diverting the lowermost portion of the air blast from an area where it is neither wanted nor needed to an area where it may be effectively utilized, confines the air within completely enclosed sides. The auxiliary deflector system in the accused sprayers confines the portion of the air blast deflected thereby within three surfaces; Myers's auxiliary deflector consists of little more than Daugherty's deflector with both the trumpet-shaped deflector and bottom plate, to which a baffle has been added across the lowermost sector of the air blast. FMC argues that Myers's equipment incorporates the essence of the Andrews patent since, in the sprayers of Myers, the "air which would normally be deflected downwardly toward the ground is isolated and directed through the machine in a separate passageway or funnel," thus minimizing the turbulent interaction of air volumes. However, in view of the Newcomb patent in which the six secondary baffles positioned on the primary deflector form what might be termed "separate passageways" and in which the six baffles generally "isolate" the air blast being deflected, appellee's position cannot be sustained.

Considering the invention revealed in the Andrews patent, the prior art, and the foregoing principles of law and rules of construction (many of which were not acknowledged or explicitly applied by the District Court), it is here determined that Myers's machines do not incorporate a funnel, or its equivalent, as that term is used in the patent in suit; while Myers's auxiliary deflector may secure the same results as achieved by sprayers embodying Andrews invention, in the broad sense that the lowermost portion of the air blast is prevented from interfering with the remaining portion of the air blast, and is utilized in carrying insecticide toward the foliage to be sprayed, Myers secures these results by means not in all respects the substantial equivalents of FMC's machines, and it cannot be said that the two sprayers operate in substantially the same way. The District Court's finding of fact that the accused devices embodied a "funnel" as the term is used in Andrews patent is thus clearly erroneous. Rule 52, Federal Rules of Civil Procedure. Accordingly, the judgment of the District Court is reversed with reference to the issue of infringement of the Andrews patent, and the complaint should be dismissed as to this patent.

Affirmed in part and reversed in part.

JUDGMENT OF THE UNITED STATES COURT OF APPEALS FOR THE SIXTH CIRCUIT.

(September 28, 1967.)

This cause came on to be heard on the record from the United States District Court for the Northern District of Ohio and was argued by counsel.

On consideration whereof, it is now here ordered and adjudged by this Court that the judgment of the said District Court in this cause be and the same is hereby affirmed in part and reversed in part, in conformity with the opinion. No costs on appeal to be awarded to either party.

ORDER DENYING REHEARING.

(November 8, 1967.)

Upon consideration, it is ORDERED that the petitions for rehearing filed by both parties hereto be and they hereby are denied.